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It is charged that remedial and experimental programs in reading ignore the results of relevant research and that research is often poorly developed. Faults of programs and research include the following: (1) There is no firm definition of the term "learning disabilities" and so they are not measured consistently. (2) Good sampling techniques often are not used in selection of subjects for experiments. (3) Too much emphasis is placed on methods of teaching and not enough on content taught. (4) Results are often slanted by the researcher or by the teacher administering tests. (5) Criteria for measuring improvement often do not reflect actual progress. (6) Editors tend not to publish studies which do not show significant results and researchers do not publicize findings which might not reflect well on them. (7) There is a tendency to extrapolate beyond the point where results from one study could apply to another group of subjects. It is suggested that innovative programs be funded. (BD)

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Myths In Remedial Education*

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Abstract

Research in remedial reading which utilized control groups has consistently demonstrated two outcomes: (1) tested reading achievement is significantly higher in the group who received remediation than in the control group at the completion of the remedial period, and (2) follow-up studies almost invariably demonstrate that the beneficial effect of this remediation "washes out" in a relatively short time after terminating remedial reading. Despite this depressing information, remedial programs and experimental programs continue to flourish. Some "myths" -- used as substitutes for facts by educators -- account in part for this situation. Using reading problems as an example, some of the more obvious myths are enumerated in this paper. A plea is made for reallocation of priorities for the education of children with learning difficulties.

Myths In Remedial Education*

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The "information lag" in education appears to be growing. Many of the myths which underlie educational programs of twenty years ago still exist. For example, that a competitive sports program builds character was largely the rationalization given for the growth of such programs and, despite no discovered relationship between the bicep and character muscle, this concept persists. As the society becomes more technologically oriented, the search for programs which may serve as panaceas becomes more frantic, and typically the society settles for several expensive placebos.

Many of the programs currently popular in education appear to totally ignore the research evidence relating to them. Oftentimes, the premises underlying educational programs exist in poorly developed research and, if the results of recent research contradicts the popular program, only earlier research is considered. Some premises are, alternatively, subjected to non-experimental "experiments." One of the most expensive and obvious examples of these are the "experimental" types of buildings in evidence. We have round buildings and square buildings, high buildings and single-story buildings, snail shaped and hexagons or pentagons or other shapes denoted by their number of sides,

windowless buildings versus glass buildings, schools dependent on reducing extraneous stimuli to a minimum, and schools which have eliminated walls to maximize a lack of structure. Despite the millions of dollars which are spent on these types of non-experimental experiments, no controlled experiments exist to determine whether any of these many shapes should be duplicated elsewhere.

Nowhere is the current practice so diametrically opposed to research results than in the area of remedial education. Stephens (1967) summarizes much of the research concerning educational programs by stating "the constancy of the school's accomplishment is one of those things that everybody knows. It is part of the folklore that, in educational investigations, one method turns out to be as good as another and that promising innovations produce about as much growth as the procedures they supplant, but no more." Stephens reviews studies ranging from 1897 through 1964 which are consistent with Nachman and Opochinsky's (1958) statement that "reviews of teaching research have consistently concluded that different teaching procedures produce little or no difference in the amount of knowledge gained by the students." Again, these types of research results are totally ignored while efforts are made to upgrade schools, reduce class sizes, introduce new textbook series, etc., even though objective research on these issues will yield less than happy outcomes for the advocates of these programs. It is the purpose of this paper

to select one area, remedial education, to discuss some of the reasons why the research outcomes are so diverse from the actual programs being carried forward. None of the ten reasons presented below are probably new to persons interested in research outcomes. However, it is this attempt to summarize them and make some recommendations for the improvement of the process between the research outcome and actual program which is the area of interest.

For the sake of clarity, the discussion presented below will attempt to limit itself to the area of learning disabilities without regard to socio-economic factors. Inclusion of the problem of ghetto education for the Negro would appear to be a different problem than the problems of children who are learning disabled in relationship to their classmates. There would appear to be sufficient information (Coleman, 1966) to indicated that the problems of ghetto education are more a matter of socio-economic class rather than strictly an educational problem, even though educators have accepted the masochistic role of whipping boy for a society which has imposed cultural restrictions on Negro achievement, no matter what the measured area.

Most of the research in the area of learning disabilities has dealt with children with reading retardation. By and large, most research indicates that children subjected to remedial reading show short-term positive effects. For example, Balow (1965) reported on a study dealing with the reading growth of children given two hours

of daily reading remediation for a five-week period during the summer. The group gained five school months in reading. Several other studies quoted by Balow also indicated immediate benefit of remediation. Balow's study dealt with clinic students at the University of Minnesota, and he concluded that (1) remedial reading is effective with severely disabled readers, and (2) however effective, short-term intensive treatment is not adequate to enable severely disabled readers to overcome their reading deficits.

Collins (1961) compared three matched groups in England, one group attending the remedial center, a second group treated at school, and a control group. The two experimental groups, tutored by psychology students, did significantly better than the controls after six months of remediation. One- and two-year follow-ups indicated that the experimental groups and the control group were reading at the same level. Lovell, et al., (1963), attempted to assess the effects of remedial education on the latest school performance of junior school children in England. Using children of a reading age less than 85 percent of their chronological age as a definition of backward readers, 184 children so classified were compared with 77 normal children. Both groups were in attendance at a full-time remedial center. It was found that there were some beneficial effects from the remediation, although the reading level of the backward readers was not raised to the level of the control students. Rasmussen and Dunne (1962) compared two groups off

retarded readers with normal intelligence: those who were in corrective classes three years earlier and those who were not. There was no significant difference in the reading improvement of the two groups. However, the remediation reduced the number of dropouts as these groups reached grades nine and ten. In a recent study, Buerger (1968) found remedial reading instruction improved tested reading upon completion of the remedial period, but no significant differences were found in mental ability, English, social studies letter grades, and standardized reading test performance between subjects and controls at follow-up. Heckerl and Sansbury (1968) followed six early adolescent boys through a three-year remedial program. Two years after termination, they were tested in reading. The mean score on the Gray Oral Reading Paragraphs for the group was 0.3 years lower in reading than their mean score at the end of the remedial period. In other words, longitudinal studies of remedial reading demonstrate that there is an increment, often of a large magnitude, at the completion of the remedial period. However, this improvement quickly "washes out" and the children seem to sink to a level commensurate with their pre-remedial experience.

Is the lack of consideration of these outcomes merely a matter of an agreement that a reading problem must be overcome, despite the research evidence, or rather a matter of an unconscious ability to ignore the research evidence? Let us examine some of the problems involved with this type of inconsistency in the hope of developing some hypotheses.

1. THE QUESTION OF DEFINITION

No one definition of learning disability exists. Learning skills, as with most human traits, are distributed along a continuum. For example, inspection of the tabled grade equivalents for any normed reading test shows that most tests have a five-grade spread of grade equivalents for any single grade. For example, if a test is administered in grade 4.5, the grade equivalents typically will range from 2.0 to 7.0. By definition, we expect 50 percent of children to be below grade level in their reading skills. Some estimate of the children's intellectual potential must be included in a definition of reading retardation. Certainly, a child with a 76 IQ who is at the 5th percentile in a regular class is achieving at an expected level. A child with an IQ of 90, who is at the 5th percentile on a standard reading test, may or may not be considered a backward reader, depending on the definition applied to his particular school or class. Obviously, there is a continuum of discrepancy scores between a child's observed and expected reading scores. Most research emphasizes one end of this continuum -- the learning disabled children -- although Silberberg and Silberberg (1967) cite cases of children who mechanical reading skills are significantly superior to their intellectual aptitude. Since the upper end of this continuum is typically ignored, the question of where to divide this continuum into "normal" learners and "retarded" learners is a critical one, and the decision is usually an arbitrary one. Rabinovitch (1954)

defined his group as children who are . . . "two years or more below the mental age obtained in performance tests." Bond and Tinker (1957) derived a formula to set up expectations for reading level based on IQ and school experience. Many studies operationally define retarded learners as children who are referred to clinics for remediation. More unfortunate are the studies which neglect completely the concept of definition. Some studies present examples of a child who is considered dyslexic because of the presence of visual-perceptual problems without even considering the child's reading level. (Silberberg and Feldt [1968] and Keough [1963] have demonstrated that many children with visual-perceptual difficulties do not have reading difficulties.) Another factor in the difficulty of defining learning difficulties is the grade level at which one approaches the problem. One would expect that a third-grade child who is one year below expected level in an area of learning has a more severe problem than a child in sixth grade who is also one year below expected level.

Thus far, no one has come up with a definition which has achieved anything approaching general acceptance from either the researcher or teacher. Rabinovitch's, mentioned above, seems to accept the tenuous presumption that performance IQ represents a child's capacity while his verbal IQ may be altered by environment. Formulas, such as Bond and Tinker's, are usually not satisfactory in the early grades and would be inconsistent from grade to grade. Most other definitions suffer from

arbitrariness or impracticality. The most satisfactory answer thus far would appear to be establishing a normative population similar to Jastak's (1965). The weakness in Jastak's approach is the inclusion of age with grade equivalent, expectation, and percentiles in his tables. Expected age for a child in any grade may vary from school district to school district and be altered by special circumstance. Silberberg and Silberberg (in print) innovated on Jastak's approach by entering his tables where the grade placement of a child in question most closely approximates the grade placement of a child with a 100 IQ in that table. Then, utilizing the IQ equivalent method, an estimate of an expected reading level is obtained. Considering the hundreds of publications on learning disabilities, it is amazing that none have established useful relationships between grade placement, reading level, and IQ, so that an expected reading level can be established for any child, and the standard error of difference can be used to establish cutting points between normal, borderline, and retarded readers.

2. SELECTION FACTORS IN SAMPLES

It is seldom that one is aware when this difficulty arises. Either it is not mentioned or, more probably, the "method" section of most research reports may not receive the intensive reading that the "results" section receives. However, the results of some studies have been diluted because of factors which are not blatent but nevertheless should affect the outcome. For example, in studies of primary grade children,

elimination of those children whom the teacher intends to retain at the end of the school year may eliminate a very important subsample which would clarify the relationship between the criterion instrument and the presence of learning disabilities. Further problems concern the use of psychometric instruments as criteria for selection. It would seem surprising that many researchers do not seem to be aware of the important differences between group and individual IQ tests. When group IQ tests are being used to select the sample of upper elementary or secondary level children with learning disabilities, it must be recalled that these tests are based on the ability to read and, for children without an efficient skill in this area, the test is often a very poor indicator of the child's actual functioning. In the primary grades, IQ tests typically consist of items which are largely concerned with the child's visual-motor and visual-perceptual coordination. It has been demonstrated elsewhere (Silberberg, Iversen, & Silberberg, 1968) that skills in working with non-textual materials are not very good predictors of a child's functioning in the reading area.

Another frequently made error concerns the concept of IQ as opposed to IQ tests. The selection of a population of children with IQ's of over a certain point, let us say, 80, as being of "normal" intelligence obviates many of the subtle differences which can occur, such as in the ability to make abstractions and learn, which occur between more

refined IQ levels. It is expected that the use of computers for multiple regression and leveled designs will allow more investigation of configurations of scores.

These problems are not new, and it is unfortunate that the criticism of such studies appears after the "Summary and Conclusions" section has been accepted as a scientific truth. Probably, what is needed most are more articles of criticism and more space devoted within textbooks to the critiques of earlier studies.

3. ESTABLISHING RULES BASED ON HETEROGENEOUS GROUPS

Many of the characteristics of learning disabled children have been established by measuring randomly selected groups of "normal" children and comparing them with groups of learning disabled children. Statistical tests are then applied and certain rules are established about the problem areas of learning disabled populations. Since these problem areas are now identified, remediation can take place by attacking these problem areas.

When investigating populations of learning disabled children, it is interesting to note that, as a group, they are inferior to "normal" groups in many areas. These include tests of visual perception, auditory perception, hand dominance, eye dominance, EEG patterns, other neurological correlates such as balance, behavioral difficulties, etc. From the macrocosmic view, one can come to a general conclusion that learning disabled children are probably not as neurologically integrated as

normal children and, as a group, their learning difficulties are merely another area of performance where this differential brain functioning is manifested. Unfortunately, most practitioners do not look at the vast body of research but rather look at the problem in microcosm.

For example, it has been shown in many studies that children who are learning disabled have visual-perceptual problems, these problems being defined by the child's performance on a test of visual perception. Many practitioners have, therefore, assumed that this is a causal relationship and, therefore, by training visual-perceptual abilities, reading level will be improved. As would be expected, research (Goins, 1958; Olson, 1966; M. Silberberg, 1966; Rosen, 1965) on the training of visual perception demonstrates that the children's scores increase on tests of visual perception, but there is no carry-over to reading. In careful reflection, this is not at all surprising. If visual-perceptual skills were causal to the reading process, then no child with a perceptual problem would not also manifest a reading problem. However, any clinical practitioner has discovered children with severe visual-perceptual problems when it came to decoding textual materials, whereas these problems do not appear on our traditional tests of visual perception. Nevertheless, the fact that correlation does not mean causation cannot be construed as a new discovery.

4. THE QUESTION OF COURSE CONTENT

In the education of a child with a learning disability, there are two broad categories of programs. One is the teaching of a specific skill, such as the remedial program, the speech program designed to improve auditory discrimination, etc. The other program is one which attempts to impart a certain body of knowledge to the child through use of specialized techniques, such as mechanized gadgetry, special tutoring methods, etc. Stephens (1967) summarized most of the research in the general area of improving achievement and the results are not gratifying. It would appear that, whatever one does, the achievement level of the groups of children do not differ markedly from children who are exposed to other, more normal routines. This may be due to the impression one gains that a great deal more effort is being expended in an effort to determine how to teach rather than looking at the problem of what to teach. Controlled and expensive research is not necessary to demonstrate that the content of much of our academic curriculum is totally irrelevant. Helping their children with homework and exposure to their quiz questions should convince most psychologists and educators of this irrelevancy. Until psychophysiological research reaches a more advanced stage, and we can induce learning in children by artificial means, it is doubtful that any technique will be discovered which will allow a child to want to retain for any period of time such information as the most important crops of southern France, the date of the Battle

of Waterloo, or methods of calculating square roots. These types of information can be retained over the short run, especially when the child is aware of the teacher's predisposition toward asking such questions on tests. It is thus not surprising that longitudinal studies find little permanent retention of such information.

5. THE SELECTION OF CRITERIA

To do a research study, one must make a selection of an instrument or set of behaviors to be utilized as a criterion. The purpose of this criterion is to evaluate the program, technique, or educational variable under investigation. However, there is a type of criterion which often becomes involved in studies which one could label "sop" criteria, that is, criteria which are designed as a sop to some influential group or to reduce the offensiveness of the expected findings. The effect of inclusion of such criteria in research studies is often to seriously reduce the negative implications of the actual findings. Statements such as "although no statistically significant differences were obtained, the teachers greeted the program favorably," or "despite the lack of effect on student achievement, the staff administering the program were convinced of its utility" impart a different general attitude to the reader than the research results dictate.

Another problem encountered in the criterion area is the question of whether the criterion is appropriate to the experiment. For example, utilizing a series of attitude scales to assess the effect of a compensatory

educational program does little to inform the reader of the value of the program in terms of incremental achievement, even though one can predict with some assurance that over the course of time children can learn the appropriate responses to attitudinal scales.

Of course, the use of statistics to prove a point is always a danger and the only defense against this is a careful reading of the article. For example, Eisenberg (1966) attempted to inform pediatricians that reading retardation exists and is a medical problem. Basically, what Eisenberg did was to take the normal distribution of reading level and split it up into three gross subclassifications based on socio-economic status. In looking at the curve for the lower socio-economic group, it was obvious that this distribution was positively skewed and, therefore, in need of rehabilitation. As would be expected, if the subject were given some thought, the distributions for the middle and upper socio-economic groups would, if weighted properly, reform the distribution into the expected normal curve. The simple basic fact which was overlooked in this paper, and seems to be overlooked almost continuously in remedial educational programs, is that educational attainment is measured by instruments which utilize a normal distribution. Scores on achievement tests are relative and are an indication of how well an individual child does in comparison with a normal population. There is no such thing as a "sixth grade reading level" except as defined by the text author or test author. If we discovered new

techniques by which we could dramatically raise the reading level of all children by one complete grade level, that is, if children currently able to read in a fifth grade text were suddenly able to read comfortably in a sixth grade text, the same distribution of grade equivalents would hold. All that would transpire would be that the child who is reading two grades below placement on one day would then be transformed the next day into a reader of a textbook one grade higher. However, he would still be two grades below the average student in his grade. His relative ranking would not change one bit.

If, as suggested by many remedial programs, we could take a subgroup of our population and work dramatic miracles on them, the distribution of the entire population would, by definition of the test construction, not change. All that would occur would be a re-distribution of individuals within the normal distribution. Lamentably, one can easily become suspicious that many educators are planning to cut off the bottom half of the normal curve. There are easier ways of doing this than through remediation. For example, one could construct all future reading tests in such a way that the norm tables started at the 50th percentile and went up.

6. THE RELATIONSHIP OF THE CRITERION TO THE EXPERIMENT

The common finding that educational innovations have short-term changes, as measured by certain criterion instruments, but that these changes disappear over time has generated one hypothesis which may account for

this occurrence in at least some studies. M. Silberberg's (1966) study exemplifies this type of outcome. In this study, kindergarten children were trained in reading readiness and the positive effects of this training appeared, although inconclusively, on the reading readiness tests in comparison to the control group which did not receive the reading readiness training. However, as expected, at the end of first grade the effects of this training did not alter the children's scores on a reading test. Furthermore, it was later discovered (Silberberg,, Iversen, & Silberberg, 1968) that most of the variance accounted for by the reading readiness test in predicting to end of first grade reading scores was due to one subtest on the reading readiness test, a subtest which involves actually reading letters and numerals. The largest part of the reading readiness test did not appreciably change the multiple correlation between the kindergarten and first grade tests. Could it be, therefore, that the reason for short-term changes in many cases is that children are taught materials appropriate for the criterion instrument? In other words, possibly some experimental programs are inadvertently teaching the children how to perform on the criterion tests, a transitory skill, which does not maintain in longitudinal studies. It is not surprising that programs have been described in the literature which even raise children's IQ's, as measured by an individual IQ test, when these children were taught the types of skills called for by an IQ test. Again, in this situation, one would expect that their performance a

year after completion of this special training would be very similar to their IQ before initiation of the experimental procedure.

7. THE TEACHER INFLUENCE

It is very difficult to discuss this subject because it is a subject which is not typically mentioned in polite, professional literature. Furthermore, it is based on a small sample of cases limited to the experience of the authors and their colleagues. For lack of an euphemism, this can only be labeled as teacher cheating. Oftentimes, when a teacher knows that he or she is involved in an experiment, it is very difficult to convince this teacher that the experiment does not reflect directly on their professional competence. Teachers have been observed attempting to help children. In one case, the authors were informed that one teacher had obtained copies of a criterion measure and had reviewed this instrument with his class on the day before the criterion measure was to be administered. If this is a widespread occurrence, it is more likely noticed by graduate students than busy professionals in the field who are not as intimately involved in the administration of criterion instruments. It may be partly for this reason, that on follow-up studies in longitudinal experiments, this phenomenon does not appear with great frequency in that the experimental group's present teachers do not perceive themselves as being evaluated at the time of the administration of the criterion instrument. Again, if this does exist to a great enough extent to alter research outcomes, it may require that educational

researchers become more involved with the dirty work of their research without delegating it to teachers and persons not committed to the objectivity of a research outcome.

8. THE IMPORTANCE OF PUBLICATION POLICIES

It probably has not been demonstrated statistically, but there are probably many persons in the field of educational research who realize that it is much easier to obtain acceptance for a submitted research paper if the magic words "significant differences occurred. . . ." appear instead of "no significant differences were obtained." It is at least rumored that many editors prefer to accept the concept that, if significant outcomes are obtained, this implies better research planning than the lack of significant differences. One letter of rejection received by one of the authors said as much, that is, the lack of significant differences would probably not be of interest to the readers and, furthermore, the results were not surprising since it had been hypothesized that no differences would be found.

Further credence to this impression is gained by comparing the reports in Dissertation Abstracts with those reported in professional journals. From a subjective point of view, it appears that many more experiments yield non-significant results when done as part of a doctoral dissertation than when done in the field as a professional researcher. It is certainly not the quality of the dissertations which cause this state of affairs, since they are at least as carefully administered and documented as the articles appearing in professional journals.

It is therefore proposed that either a Journal of Non-Significant Results be established or that existing journals begin devoting more space to either reports or abstracts of studies which yielded non-significant results. In this way, the professional educator can more carefully evaluate the probabilities of positive outcomes when innovating with popular techniques. This educator can then have a choice as to whether to attempt to evaluate the program, knowing full well that there is a considerable probability of non-significant outcomes, or opt to direct his research in a different direction and, therefore, avoid the embarrassment of an expenditure for non-significant differences.

9. THE APPLICABILITY OF RESULTS

There seems to be a developing tendency to extrapolate easily from the measured effects of an experimental procedure on a small select population to the entire population. Probably the most blatent occurrence of this in recent years has been the popularization of behavior modification techniques which are based on extrapolations from rat experiments to humans. At that point, the techniques were applied to small subgroups of children in specialized settings. Aside from the one case "experiments," favorable results have been reported. Many of the experimental artifacts, described in the above sections, may have occurred in some of these experiments. However, assuming that real change did occur in the behavior of these children, we were still left with the gap in the practicality of these outcomes. Based on these outcomes, many exponents of

this technique recommended that they could be applied within the classroom. Amazingly, some practitioners accepted this concept, even though the research which supposedly evinced change may have cost as much as five or ten thousand dollars in man hours in order to achieve success. Considering that the average expenditure per pupil in public schools is less than five hundred dollars a year, a credibility gap exists between such research and its applicability within the classrooms. Of course, when behavior modification techniques were attempted within the regular classroom routine, the typical result was as predicted, that is negative (Beamer, 1966; N. Silberberg, 1967; Taylor & Hoedt, 1966; McGrade, 1966; Spaights & Blum, 1967). It is possibly because of the failure to demonstrate positive outcomes that so much of the professional literature is devoted to "pure" and theoretical research rather than practical research. This leads us directly to the last area to be discussed.

10. THE PROBLEM OF VESTED INTERESTS

In Section 8 above, we discussed the possibility of publication of non-significant outcomes. However, this in itself does not guarantee that all studies with negative outcomes are reported. There is probably no way to estimate at this time what proportion of research studies go completely unreported because their outcomes would be personally detrimental to the investigator. Does the university professor, teaching techniques of behavior modification, wish to popularize the studies

which have yielded negative outcomes? And, more important, if he did a small-scale study which yielded negative outcomes, would he wish to publish it in a vehicle which receives high exposure to other professionals? Happily, many such studies do appear in professional literature, even though they are often diluted by some of the shortcoming noted in Section 5 above. Nevertheless, it is doubtful that there are many among us who are willing to publicly state that we are perpetuating myths. It would be difficult for the assistant professor of education to publicly state that psychotherapy does not work, speech therapy does not work, remedial reading does not work, and operationally define the criterion of "work." This would be directly threatening to the persons whose empires have been built on teaching how to do psychotherapy, how to do speech therapy, and how to teach remedial reading.

Within the schools, the persons with the responsibility of teaching children are inundated with information from book publishers concerning the superiority of this text versus that text or this workbook versus that workbook. In fact, many curricula could be defined as the content of a textbook series, which means that curriculum can be based on the relative skills of book salesmen.

Money, in education as elsewhere, is probably the most important single variable to be considered. As a group, publishing houses are one of the largest lobbies in Congress and expenditures for education are great. One cannot attempt to be realistic about research on classroom

proactices without attempting to note the framework within which one can attempt to alter these processes.

CAN WE ACHIEVE CHANGE?

It is relatively simple to stand and criticize. If one would continue logically from the line of reasoning stated above, such conclusions could be reached as "why bother?" Does this mean that the search for innovations in remedial education should be halted? Not at all. Rather, it would seem more logical to allocate educational research funds into new and creative ideas, even if some of these ideas are aberrant within the rather rigid framework of educational thinking. If, for example, remedial reading actually has no effect on a child's reading level over the long run, why continue to expand remedial reading programs in their present form into more and more schools and with greater expense? Could not this money and brain power be more properly focused on less painful ways of presenting a curriculum to a child? Or could it be used to look at ways to expand the curriculum to meet the needs of more chidren, rather than attempting to find new ways of altering children's behaviors to meet the needs of the curriculum?

Possibly what is needed is to stop and look at our curriculum in light of its relationship to the problems of the real world. This may be the time for education to assert leadership in the society, rather than the follower's role. Can educators tell personnel directors that their job criteria are often unrealistic in terms of the capabilities

present in a normal population? Can educators renovate the classical eighteenth century curriculum designed for the talented few and foisted on the unwary many?

Considering the amount of money expended for remedial education per year, many of the problems described above seem to be seriously reducing the amoung of bang we are receiving for our educational buck. The stakes are too great to continue wasting time and effort on new projects which, if one bothered to dig deep enough, would be found to be useless. While many of the important problems of education, such as who shall run the schools, who shall pay for the schools, etc., have been brought into the open market place for all pressure groups to discuss, the educational researcher has stood on the fringes, imparting information quietly and academically. In terms of society's needs, such scholarly and gentlemanly conduct may be unbecoming.

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References

Balow, B. The long term effect of remedial reading instruction. Reading Teacher, April, 1965, 18, 581-586.

Beamer, J. The effects of teacher comments on test papers toward pupil performance. Journal of Educational Research, March, 1966, 59, 333.

Bond, G., & Tinker, M. Reading difficulties, their diagnosis and correction. New York: Appleton--Century, 1957.

Buerger, T. A follow-up of remedial reading instruction. Reading Teacher, June, 1968, 21, 329-334.

Coleman, J. F. The equality of educational opportunity. Washington, D. C.: U. S. Printing Office, 1966.

Collins, J. E. The effects of remedial education. Educational Monographs, No. 4, Edinburgh: Oliver & Boyd, 1961, 154 pp.

Eisenberg, L. Reading retardation: I. Psychiatric and sociologic aspects. Pediatrics, September, 1966, 37, 2, 352-265.

Goins, J. Visual perceptual abilities and early reading progress. Supplementary Educational Monographs, No. 87, 1958.

Heckerl, J., & Sansbury, R. A study of severe reading retardation. Reading Teacher, May, 1968, 21, 724-729.

Jastak, J. F., & Jastak, S. R. Wide Range Achievement Test manual. Wilmington: Guidance Associates, 1965.

Keough, B. The Bender-Gestalt as a predictive and diagnostic test of reading performance. Dissertation Abstracts, 1963, 24, 2360.

Lovell, K., Byrne, C., & Richardson, B. A further study of the educational progress of children who received remedial education. British Journal of Educational Psychology, February, 1963, 33, 3-9.

McGrade, B. Variation in effectiveness of verbal reinforcers with age and social class. Dissertation Abstracts, 1966, 26, 4800.

Nachman, M., & Opochinsky, S. The effects of different teaching methods: A methodological study. Journal of Educational Psychology, October, 1958, 49, 245-249.

Olson, A. School achievement, reading ability, and specific visual-perception skills in the third grade. Reading Teacher, April, 1966, 19, 490-492.

Rabinovitch, R. D., et al. A research approach to reading retardation. Research Publications for the Association for Research in Nervous and Mental Disease, 1954, 34, 363-396.

Rasmussen, G., & Dunne, H. A longitudinal evaluation of a junior high school corrective reading program. Reading Teacher, November, 1962, 16, 95-101.

Rosen, C. A study of visual-perception capabilities of first grade pupils and the relationship between visual-perceptual training and reading achievement. Unpublished doctoral dissertation, University of Minnesota, 1965.

Silberberg, M. The effect of formal reading readiness training in kindergarten on development of readiness and growth in reading. Unpublished doctoral dissertation, University of Minnesota, 1966.

Silberberg, N. The effect of social approval on children's drawings. Mimeod report, Kenny Rehabilitation Institute: Minneapolis, 1967.

Silberberg, N., & Feldt, L. An investigation of the intellectual and perceptual correlates of reading difficulties. Journal of School Psychology, in print.

Silberberg, N., Iversen, I., & Silberberg, M. The predictive efficiency of the Gates Reading Readiness Test. The Elementary School Journal, January, 1968, 68, 213-218.

Silberberg, N., & Silberberg, M. Case histories in hyperlexia. Journal of School Psychology, in print.

Silberberg, N., & Silberberg, M. Hyperlexia--Specific word recognition abilities in children. Exceptional Children, September, 1967, 34, 41-42.

Spaights, E., & Blum, L. Social reinforcement counseling as an adjunct to a course in education. Journal of Educational Research, February, 1967, 60, 256-259.

Stephens, J. M. The process of schooling. New York: Holt, Reinhart, and Winston, 1967.

Taylor, W., & Hoedt, K. The effect of praise upon the quality and quantity of creative writing. Journal of Educational Research, October, 1966, 60, 80-83.